

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant: Hideaki UMEYAMA et al.

Title: LIGAND SEARCHING DEVICE, LIGAND  
SEARCHING METHOD, PROGRAM, AND  
RECORDING MEDIUM

Appl. No.: Unassigned

Filing Date: 08/18/2006

International Appl. No.: PCT/JP2005/003558

International Filing Date: 2/24/2005

Examiner: Unknown

Art Unit: Unknown

**INFORMATION DISCLOSURE STATEMENT**  
**UNDER 37 CFR §1.56**

Mail Stop PCT  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Submitted herewith on Form PTO/SB/08 is a listing of documents known to Applicants in order to comply with Applicants' duty of disclosure pursuant to 37 CFR §1.56.

A copy of each non-U.S. patent document and each non-patent document is being submitted to comply with the provisions of 37 CFR §1.97 and §1.98.

The submission of any document herewith, which is not a statutory bar, is not intended as an admission that such document constitutes prior art against the claims of the present application or that such document is considered material to patentability as defined in 37 CFR §1.56(b). Applicants do not waive any rights to take any action which would be

appropriate to antedate or otherwise remove as a competent reference any document which is determined to be a *prima facie* art reference against the claims of the present application.

**TIMING OF THE DISCLOSURE**

The listed documents are being submitted in compliance with 37 CFR §1.97(b), within three (3) months of the date of entry of the national stage as set forth in 37 CFR §1.491.

**RELEVANCE OF EACH DOCUMENT**

Documents A1 through A7 were cited in the International Search Report in Applicants' International Application PCT/JP2005/0003558. A copy of the International Search Report setting forth the portion of each reference considered relevant by the examiner is attached.

Documents A8 through A15 are in English and described in the present specification.

Documents A1 and A4 belong to the same "patent family," whereby the English language document may assist the PTO in understanding the content of the non-English language document.

Documents A2 and A5 belong to the same "patent family," whereby the English language document may assist the PTO in understanding the content of the non-English language document.

Unless otherwise indicated, no English translation is readily available (not considering machine-generated translations that may be freely available online, to both the Applicant and the PTO) for each of the non-English language documents. However, a commercially available English language abstract is provided herewith, where indicated on the attached Form PTO/SB/08. Inasmuch as Applicants have endeavored to provide at least one item that complies with the requirement for a "concise explanation of relevance" for each of the non-English language documents, each of these documents has been submitted in compliance with

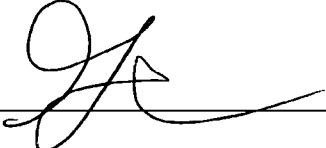
10/590116  
Rec'd PCT/PTO 18 AUG 2006  
Atty. Dkt. No. 079088-0102

the PTO requirements and should be considered by the Examiner (37 CFR §1.97, §1.98 and MPEP §609).

Applicants respectfully request that each listed document be considered by the Examiner and be made of record in the present application and that an initialed copy of Form PTO/SB/08 be returned in accordance with MPEP §609.

Although Applicants believe that no fee is required for this Request, the Commissioner is hereby authorized to charge any additional fees which may be required for this Request to Deposit Account No. 19-0741.

Respectfully submitted,

By 

Date: August 18, 2006

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Substitute for form 1449B/PTO				Complete if Known <i>10/15/00 116</i>	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT				Application Number	Unassigned
Date Submitted: August 18, 2006 (use as many sheets as necessary)				Filing Date	08/18/2006
				First Named Inventor	Hideaki Umeyama
				Group Art Unit	Unknown 1631
				Examiner Name	Unknown Clow
Sheet	1	of	2	Attorney Docket Number	079088-0102

## U.S. PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	U.S. Patent Document		Name of Patentee or Applicant of Cited Document	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number	Kind Code <sup>2</sup> (if known)			
	A1	2001/0018682	A1	ITAI ET AL.	08-30-2001	
	A2	5,642,292	A	ITAI ET AL.	06-24-1997	

## FOREIGN PATENT DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document			Name of Patentee or Applicant of Cited Documents	Date of Publication of Cited Document MM-DD-YYYY	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear	T <sup>6</sup>
		Office <sup>3</sup>	Number <sup>4</sup>	Kind Code <sup>5</sup> (if known)				
	A3	WO	02/057954	A1	MITSUBISHI CHEMICAL CORPORATION	07-25-2002		ABS
	A4	WO	1996/013785	A1	AKIKO ITAI	05-09-1996		ABS
	A5	WO	1993/020525	A1	AKIKO ITAI	10-14-1993		ABS

## NON PATENT LITERATURE DOCUMENTS

Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.	T <sup>6</sup>
	A6	HIDEAKI UMEYAMA, "Tanpakushitsu no Yudo Tekigo o Koryoshita Ligand Tansaku System", Dai 32 Kai Kozo Kassei Sokan Symposium Koen Yoshishu, November 10, pgs. 33-36 (2004)	ABS
	A7	NORIYUKI YAMAOTO, "Hyoteki Tanpakushitsu no Induced Fit o Koryoshita Ligand Docking (1) : Brownian Doryoku Gakuho o Mochiita Fukugotai Kozo Saitekika", Dai 31 Kai Kozo Kassei Symposium Koen Yoshishu, pgs. 115-118 (2003)	ABS
	A8	G.M. MORRIS et al., "Automated Docking Using a Lamarckian Genetic Algorithm and an Empirical Binding Free Energy Function", Journal of Computational Chemistry, Vo. 19, No. 14, pgs. 1639-1662 (1998)	
	A9	DAVID S. GOODSELL et al., "Automated Docking of Flexible Ligands: Applications of AutoDock", Journal of Molecular Recognition, Vol. 9, pgs. 1-5 (1996)	
	A10	TODD J. EWING et al., "DOCK 4.0: Search strategies for automated molecular docking of flexible molecule databases", Journal of Computer-Aided Molecular Design, 15, pgs. 411-428 (2001)	
	A11	MATTHIAS RAREY et al., "A Fast Flexible Docking Method using an Incremental Construction Algorithm", J. Mol. Biol. 261, pgs. 470-489 (1996)	
	A12	MATTHIAS RAREY et al., "Placement of medium-sized molecular fragments into active sites of proteins", Journal of Computer-Aided Molecular Design, 10, pgs. 41-54 (1996)	
	A13	GARETH JONES et al., "Molecular Recognition of Receptor Sites using a Genetic Algorithm with a Description of Desolvation", J. Mol. Biol., 245, pgs. 43-53 (1995)	

Examiner Signature	/Lori Clow/	Date Considered	07/07/2010
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\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup> Unique citation designation number. <sup>2</sup>See attached Kinds of U.S. Patent Documents. <sup>3</sup>Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup>For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document.

<sup>5</sup>Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup>Applicant is to place a check mark here if English language Translation is attached.

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Substitute for form 1449B/PTO <b>INFORMATION DISCLOSURE STATEMENT BY APPLICANT</b> Date Submitted: August 18, 2006 (use as many sheets as necessary)				<i>Complete if Known</i> <b>1590116</b>	
Sheet	2	of	2	Application Number	Unassigned
				Filing Date	08/18/2006
				First Named Inventor	Hideaki Umeyama
				Group Art Unit	Unknown
				Examiner Name	Unknown
				Attorney Docket Number	079088-0102

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Examiner Initials*	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.) date, page(s), volume-issue number(s), publisher, city and/or country where published.		
	A14	GARETH JONES et al., "Development and Validation of a Genetic Algorithm for Flexible Docking", J. Mol. Biol., 267, pgs. 727-748 (1997)		
	A15	MIHO YAMADA MIZUTANI et al., "Efficient Method for High-Throughput Virtual Screening Based on Flexible Docking: Discovery of Novel Acetylcholinesterase Inhibitors", J. Med. Chem., 47, pgs. 4818-4828 (2004)		

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /LC/

Examiner Signature	/Lori Clow/	Date Considered	07/07/2010
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